

SUBSTITUTE SPECIFICATION

DESCRIPTION

PLATING APPARATUS AND PLATING METHOD

Technical Field

OK to Enter
WL 8/27/10

5 The present invention relates to a plating apparatus and
a plating method, and more particularly to a plating apparatus
and a plating method used for filling a fine interconnect pattern
formed in a substrate, such as a semiconductor substrate, with
metal (interconnect material) such as copper so as to form
10 interconnects.

Background Art

Recently, there has been employed a circuit forming method
comprising forming fine recesses for interconnects, such as
15 trenches or via holes in a circuit form, in a semiconductor
substrate, embedding the fine recesses with copper (interconnect
material) by copper plating, and removing a copper layer (plated
film) at portions other than the fine recesses by CMP means or
the like. In this method, from the viewpoint of reducing loads
20 on subsequent CMP, it is desirable that a copper plated film be
deposited selectively in trenches or via holes in a circuit form,
and that the amount of copper plated film deposited on portions
other than the trenches or via holes be small. In order to achieve
such an object, there have heretofore been proposed various ideas
25 regarding a plating solution, such as composition in a bath of
a plating solution or a brightener used in a plating solution.

Meanwhile, in order to deposit a copper plated film
selectively in trenches in a circuit form or the like, there has